

## EAST Search History

| Ref # | Hits  | Search Query   | DBs                    | Default Operator | Plurals | Time Stamp       |
|-------|-------|--|------------------------|------------------|---------|------------------|
| L8    | 7     | ("4806504"   "5279704"   "5449639"   "5486234"   "5942449"   "6010931").PN. OR ("6436809").URPN.   | US-PGPUB; USPAT; USOCR | OR               | OFF     | 2007/02/07 12:27 |
| L9    | 679   | ("238"/\$.ccls. "438"/\$.ccls. ) and align\$ with (recess\$ opening mark\$4) same etch\$ and (sacrific\$ plug) same (mark recess opening)  | USPAT                  | OR               | ON      | 2007/02/07 12:39 |
| L10   | 800   | ("238"/\$.ccls. "438"/\$.ccls. ) and align\$ near4(recess\$ opening mark\$4) same etch\$ and (sacrific\$ plug) same (mark recess opening)  | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 12:39 |
| L11   | 562   | ("238"/\$.ccls. "438"/\$.ccls. ) and align\$ near3 (recess\$ opening mark\$4) same etch\$ and (sacrific\$ plug) with (mark recess opening)   | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 14:31 |
| L12   | 2670  | 438/631,672,462.ccls.  | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 14:31 |
| L13   | 458   | 438/631,672,462.ccls. and align\$. clm.  | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 14:31 |
| L14   | 116   | 438/631,672,462.ccls. and align\$. clm. and (polish\$.clm. planar.clm.)  | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 14:32 |
| L15   | 177   | 438/631,672,462.ccls. and align\$. clm. and (polish\$.clm. planar\$.clm.)  | US-PGPUB; USPAT        | OR               | ON      | 2007/02/07 14:32 |
| S1    | 11859 | "438"/\$.ccls. and align\$4 with (mark\$4 notch\$ etch\$ recess)   | US-PGPUB; USPAT        | OR               | ON      | 2006/09/28 19:19 |
| S2    | 16    | US-6232200-\$.DID. OR<br>US-6080636-\$.DID. OR<br>US-6271602-\$.DID. OR<br>US-6307273-\$.DID. OR<br>US-6528386-\$.DID. OR<br>US-6534378-\$.DID. OR<br>US-6562710-\$.DID. OR<br>US-6562691-\$.DID. OR<br>US-6599809-\$.DID. US-5492269-\$.<br>DID. OR US-5663099-\$.DID. OR<br>US-3242770-\$.DID. "20020098707"<br>"20020096775" "20010049177"<br>"20010010938" | US-PGPUB; USPAT        | OR               | ON      | 2006/09/28 18:37 |
| S3    | 3     | ("5578519"   "6020263"   "6133111").PN. OR ("6599809").URPN.   | US-PGPUB; USPAT; USOCR | OR               | OFF     | 2006/09/28 18:48 |
| S4    | 5601  | "438"/\$.ccls. and alignment\$4 with (mark\$4 notch\$ etch\$ recess)   | US-PGPUB; USPAT        | OR               | ON      | 2006/09/28 19:22 |

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|     |      |  |                        |    |     |                  |
|-----|------|--|------------------------|----|-----|------------------|
| S5  | 1199 | "438"/\$.ccls. and alignment\$4 with (mark\$4 notch\$ etch\$ recess) same metal  | US-PGPUB; USPAT        | OR | ON  | 2006/09/28 19:22 |
| S6  | 1733 | "438"/\$.ccls. and alignment\$4 with (mark\$4 notch\$ etch\$ recess) with substrate  | US-PGPUB; USPAT        | OR | ON  | 2006/09/28 19:23 |
| S7  | 141  | "438"/\$.ccls. and alignment\$4 with (mark\$4 notch\$ etch\$ recess) with substrate and alignment\$4 with (mark\$4 notch\$ etch\$ recess) with via   | US-PGPUB; USPAT        | OR | ON  | 2006/09/28 19:24 |
| S8  | 4    | ("20020050651"   "20020060354"). PN. OR ("6562710").URPN.  | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 19:50 |
| S9  | 12   | ("5270255"   "5271798"   "5316966"   "5496777"   "5532520"   "5627624"   "5640053"   "5705320"   "5733801").PN. OR ("6054361"). URPN.  | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 19:57 |
| S10 | 36   | ("20020005594"   "20020072195"   "20030102576"   "5065765"   "5538819"   "5712189"   "5739575"   "5747842"   "5889298"   "5920121"   "5937286"   "5943581"   "6025261"   "6054361"   "6080635"   "6081040"   "6093640"   "6100176"   "6121126"   "6133111"   "6136662"   "6157087"   "6215197"   "6228744"   "6303460"   "6303472"   "6352904"   "6352909"   "6383924"   "6417072"   "6462428"   "6576529"   "6579738"   "6667221"   "6696746"   "6740564").PN. OR ("6949839").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:01 |
| S11 | 42   | sacrific\$ with bilayer  | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:14 |
| S12 | 23   | mram and alignment\$ with mark   | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:38 |
| S13 | 50   | (tantalum adj nitride tan ) and (ta tantalum ) with (cu copper) with bilayer   | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:39 |
| S14 | 2    | (tantalum adj nitride tan ) and (ta tantalum ) with (cu copper) with bilayer and mram  | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:39 |
| S15 | 3    | (tantalum adj nitride tan ) and (ta tantalum ) same (cu copper) same bilayer and mram  | US-PGPUB; USPAT; USOCR | OR | OFF | 2006/09/28 20:46 |

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|     |      |   |                              |    |     |                  |
|-----|------|---|------------------------------|----|-----|------------------|
| S16 | 60   | (tantalum adj nitride tan ) and (ta tantalum ) with (cu copper) same (strap electrode) and mram | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 22:42 |
| S17 | 5413 | mram  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 22:42 |
| S18 | 120  | mram and strap  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 22:52 |
| S19 | 70   | alignment with mark and copper with diffus\$  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 22:53 |
| S20 | 18   | alignment with mark same copper and copper with diffus\$  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:05 |
| S21 | 71   | "438"/\$.ccls. and alignment with mark same copper  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:06 |
| S22 | 28   | "438"/\$.ccls. and alignment with mark same copper and (etch\$ remov\$4) with copper            | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:31 |
| S23 | 856  | "438"/401,975.ccls.   | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:31 |
| S24 | 148  | "438"/401,975.ccls. and copper  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:32 |
| S25 | 82   | "438"/401,975.ccls. and copper and (cmp polish\$)   | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:33 |
| S26 | 7    | "438"/401,975.ccls. and copper and (cmp polish\$) and mram                                      | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:39 |
| S27 | 85   | via same tan with barrier same (ta tantalum ) with adhesion same copper                         | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/28 23:40 |
| S28 | 1    | "6599809".pn.   | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/29 10:42 |
| S29 | 1    | "6599809".pn. and (vapor pvd cvd)   | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/29 10:53 |
| S30 | 802  | (pvd cvd vapor adj deposition) with tungsten with tantalum                                      | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/29 10:59 |

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|     |    |   |                              |    |    |                  |
|-----|----|---|------------------------------|----|----|------------------|
| S31 | 69 | (pvd cvd vapor adj deposition) with tungsten with tantalum and phosphoric with acid             | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:02 |
| S32 | 9  | (pvd cvd vapor adj deposition) with tungsten with tantalum with copper and phosphoric with acid | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:04 |
| S33 | 74 | (pvd cvd vapor adj deposition) same tungsten with tantalum with copper and phosphoric with acid | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:06 |
| S34 | 13 | (pvd cvd vapor adj deposition) with tungsten with tantalum with copper with via                 | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:09 |
| S35 | 29 | (pvd cvd vapor adj deposition) with tungsten with tantalum with copper same via                 | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:20 |
| S36 | 11 | phosphoric with acid with etch with tungsten  | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:21 |
| S37 | 51 | phosphoric with acid with etch\$ with tungsten  | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:21 |
| S38 | 32 | "438"/\$.ccls. and phosphoric with acid with etch\$ with tungsten                               | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:21 |
| S39 | 29 | "438"/\$.ccls. and phosphoric adj acid with etch\$ with tungsten                                | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:29 |
| S40 | 0  | "438"/\$.ccls. and phosphoric adj acid with dilut\$ with tungsten                               | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:29 |
| S41 | 12 | "438"/\$.ccls. and phosphoric adj acid with dilut\$ same tungsten                               | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:36 |
| S42 | 10 | phosphoric adj acid with dilut\$ with tungsten  | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:33 |
| S43 | 16 | "438"/\$.ccls. and phosphoric adj acid with dilut\$ same copper                                 | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:37 |
| S44 | 9  | "438"/\$.ccls. and phosphoric adj acid with dilut\$ with copper                                 | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:41 |
| S45 | 20 | "438"/\$.ccls. and alignment adj mark and mram  | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2006/09/29 11:55 |

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|     |      |  |                              |    |     |                  |
|-----|------|--|------------------------------|----|-----|------------------|
| S46 | 24   | "438"/\$.ccls. and strap and mram  | US-PGPUB;<br>USPAT;<br>USOCR | OR | ON  | 2006/09/29 11:55 |
| S47 | 9    | ("20010041401"   "20020097600"  <br>"20030073251"   "5702831"  <br>"5734605"   "6544801"   "6611453"<br>  "6638774"   "6713802").PN. OR<br>("6977181").URPN. | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2006/09/29 11:59 |
| S48 | 1663 | "438"/\$.ccls. and align\$ with<br>mark\$4   | USPAT                        | OR | OFF | 2007/02/06 17:32 |
| S49 | 1668 | ("238"/\$.ccls. "438"/\$.ccls. ) and<br>align\$ with mark\$4   | USPAT                        | OR | OFF | 2007/02/06 17:32 |
| S50 | 768  | ("238"/\$.ccls. "438"/\$.ccls. ) and<br>align\$ with mark\$4 same etch\$   | USPAT                        | OR | OFF | 2007/02/06 17:33 |
| S51 | 177  | ("238"/\$.ccls. "438"/\$.ccls. ) and<br>align\$ with mark\$4 same etch\$ and<br>(sacrific\$ plug)  | USPAT                        | OR | OFF | 2007/02/07 12:35 |
| S52 | 7    | ("5486234"   "5942449").PN. OR<br>("6140233").URPN.  | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2007/02/06 17:50 |
| S53 | 4    | "6140233" and planar\$   | USPAT                        | OR | OFF | 2007/02/06 18:27 |
| S54 | 7    | ("4806504"   "5279704"   "5449639"<br>  "5486234"   "5942449"  <br>"6010931").PN. OR ("6436809").<br>URPN.   | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2007/02/06 18:30 |